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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,200	07/22/2002	Thomas Lisec	127FR/50898	1074

23911 7590 08/29/2003

CROWELL & MORING LLP
INTELLECTUAL PROPERTY GROUP
P.O. BOX 14300
WASHINGTON, DC 20044-4300

EXAMINER

FRANK, RODNEY T

ART UNIT	PAPER NUMBER
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2856

DATE MAILED: 08/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/088,200

Applicant(s)

LISEC ET AL.

Examiner

Rodney T. Frank

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8,9,14 and 18 is/are allowed.
- 6) ☒ Claim(s) 1-7,10-13,15-17,19 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. There is no support in the specification to determine the distance between electrode pairs to be approximately 100 μm .

3. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. There is no support in the specification for the "or" recitation in the claim.

4. Claim 17 rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. There is no support in the specification for an alternating current in the range of 100 millivolts.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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6. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 10 recites the limitation "bubbles" in lines 2 and 3 of the claim. There is insufficient antecedent basis for this limitation in the claim. Claim 9, from which claim 10 now depends, recites a bubble and said bubble, but no plurality of bubbles. For example, line 2 of the claim should read "... wherein the bubble is filled with gas, and the length of the bubble..." – Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 3, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Scheib (U.S. Patent Number 4,169,377) Scheib discloses a level sensing system for determining the quantity of a fluent or flowable material in a container including a level sensor and a monitor wherein the sensor is constructed of a pipe of non-conducting material with pairs of electrodes exposed to the fluent material and connected to resistance bars to produce a proportionate voltage signal across the resistance of the sensor in accordance with the quantity of fluent material. The monitor transforms the signal into a readable output (please see the abstract).

In reference to claim 1, Scheib discloses in the disclosure and shows in figure 3, a sensor element with a substrate (15a) a plurality of electrodes (16) adapted to be contacted individually where the electrodes are networked with electrical connections, wherein the electrodes are always

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positioned opposite one another, separated by a distance, to form electrode pairs, and the pairs recur periodically over the length of the sensor element wherein the electrodes are electrically insulated from each other (please see column 4 lines 11-34 and claim 2).

In regard to claim 3, the limitations disclosed here are clearly shown in figure 3 of Scheib.

In regard to claim 7, the means for determining liquid level where the surface being wet is used to ascertain liquid level is disclosed.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2, 4-6, 11, 12, 16, 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scheib in view of Murata (U.S. Patent Number 5,148,708; hereinafter referred to as Murata). Murata discloses a liquid level sensor for detecting a level of an electrolyte where: a pair of resistance films are formed on an insulating substrate: a plurality of electrodes are intermittently mounted on the resistance films in the longitudinal direction; the resistance films are soaked in the electrolyte in the vertical direction along the longitudinal direction; the liquid surface is detected from the variation of the resistance value of the resistance films caused by the short-circuiting of pairs of the electrodes in the electrolyte. The exposed surface of the resistance film is covered by a moisture-resistance film (please see the abstract).

12. In regard to claim 2, it is disclosed in Murata that the electrodes are coated with a resistance film (24b) (see column 1 lines 50-56).

In regard to claim 4, Murata discloses that the interval between the electrodes is set to less than 1 mm (see column 4 lines 5-8).

In regard to claim 5, a substrate made of plastic is disclosed in Murata (see column 1 lines 39-45).

In regard to claim 6, though the Murata reference discloses the electrodes are made of silver, the metals in the claim are well known to one of ordinary skill in the art to make electrodes.

In regard to claims 11 and 12, the methods of measuring liquid level utilizing the apparatus disclosed in Murata to compare resistance values and using the resistance values to determine liquid level is disclosed.

In regard to claim 16, 19, and 20 these methods of performing a measurement by measuring the resulting current across the electrodes would be obvious to one of ordinary skill in the art.

In regard to claim 17, utilizing a particular frequency range would be obvious to one of ordinary skill in the art.

Allowable Subject Matter

13. Claims 8, 9, 14, and 18 are allowed.

14. The following is an examiner's statement of reasons for allowance: An arrangement for measuring capillary filling, including a sensor element wherein the sensor element is attached to a capillary in such a way that the sensor-active partial electrodes are situated inside the capillary, and that at least one conductivity boundary of the capillary filling is located in the region of the sensor element, in combination with all other limitations of the independent claim is not disclosed nor deemed obvious in view of the prior art of record.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

15. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. German Patent Document DE 196 44 777 is important to the general skill of the art as it has a series of electrically insulated electrodes on a substrate.

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

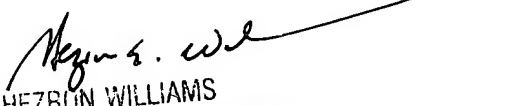
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney T. Frank whose telephone number is (703) 306-5717. The examiner can normally be reached on M-F 9am -5:30p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.

RTF
August 23, 2003


HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800